

WHAT IS CLAIMED IS:

1. In an inverse multiplexing digital data over a connection consisting of a plurality of transmission links, said data containing a series of ATM data cells, a method of testing connectivity of the transmission links comprising steps of:

5 sending a series of inverse multiplexing control cells containing a test message over one of the transmission links;

10 receiving a series of inverse multiplexing control cells containing received test messages over all the ~~remaining~~ transmission links; and

verifying the received test messages to determine the connectivity of the transmission links.

15 2. The method of testing connectivity of the transmission links according to claim 1 wherein the step of sending comprising further steps of:

setting a field within each of the series of inverse multiplexing control cells to identify a transmission link to be tested, and:

20 sending the series of inverse multiplexing control cells containing a preset test pattern over the transmission links.

3. The method of testing connectivity of the transmission links according to claim 2, comprising further steps of:

25 receiving a series of inverse multiplexing control cells to see if the test pattern are copied thereon, and

30 sending the series of inverse multiplexing control cells over all the ~~remaining~~ transmission links.

4. The method of testing connectivity of the transmission links according to claim 1, comprising further steps of:

setting a timeout period during which a series of inverse multiplexing control cells are continuously sent over the transmission links.

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5. The method of testing connectivity of the transmission links according to claim 1, wherein the step of verifying comprising further steps of:

- monitoring the test message on the received inverse
- 5 multiplexing control cells to determine which transmission links belong to one group.

6. A method of inverse multiplexing digital data over a connection consisting of a plurality of transmission links, said data
- 10 containing a series of ATM data cells, comprising steps of:
- sending a series of inverse multiplexing control cells indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;
 - receiving from the plurality of transmission links a series of
 - 15 inverse multiplexing control cells whose receive ready field is set;
 - sending each ATM data cell in said series of ATM data cells in said specific round robin order; and
 - further sending two consecutive inverse multiplexing control cells in a frame, indicating cell stuffing.

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7. In an inverse multiplexing digital data over a connection consisting of a plurality of transmission links, said data containing a series of ATM data cells, an apparatus for testing connectivity of the transmission links comprising:

- 25 a transmitter for sending a series of inverse multiplexing control cells containing a test message over one of the transmission links;
- a receiver for receiving a series of inverse multiplexing control cells containing received test message over all the remaining transmission links; and
- 30 a message control device for verifying the received test message to determine the connectivity of the transmission links.

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